

WHAT IS CLAIMED IS

1. An audio control signal transmission apparatus comprising:

control instruction input means for specifying a control instruction to be transmitted;

audio control signal generating means for generating an audio control signal corresponding to the control instruction specified by said control instruction input means; and

signal output means for outputting the audio signal to be transmitted and the audio control signal generated by said audio control signal generating means;

wherein said output means outputs an audio control signal corresponding to the control instruction and an audio signal.

2. An audio control signal transmission apparatus as claimed in Claim 1, said apparatus further comprising signal switching means for switching the audio signal to be transmitted, to the audio control signal generated by said audio control signal generating means,

wherein said signal output means outputs the audio control signal and the audio signal supplied via said signal switching means.

3. An audio control signal transmission apparatus as claimed in Claim 1, said apparatus further comprising signal superimposing means for superimposing the audio control signal

generated by said audio control signal generated means, on the audio signal to be transmitted,

wherein said signal output means outputs the audio signal superimposed with an audio control signal corresponding to a control instruction to be transmitted which is supplied via said signal superimposing means.

4. An audio control signal transmission apparatus as claimed in Claim 1, wherein said signal output means transmits to a signal transmission path an audio control signal corresponding to a control instruction and an audio signal to be transmitted.

5. An audio control signal transmission apparatus as claimed in Claim 1, wherein said signal output means is radio transmission apparatus and transmits as a radio wave, an audio control signal corresponding to a control instruction and an audio signal to be transmitted.

6. An audio control signal transmission apparatus as claimed in Claim 1, wherein said signal output means is audio output means and transmits an audio control signal corresponding to a control instruction and an audio signal to be transmitted, as a sound wave.

7. An audio control signal transmission apparatus as claimed in Claim 1, wherein said audio control signal

generating means generates as a control instruction to be transmitted, an audio control signal for giving an operation control instruction for controlling operation of an apparatus to be controlled.

8. An audio control signal transmission apparatus as claimed in Claim 1, wherein said audio control signal generating means generates as a control instruction to be transmitted, an audio control signal for giving a character display control instruction for character display control.

9. An audio control signal transmission apparatus as claimed in Claim 1, wherein said audio control signal generating means generates a DTMF signal string as an audio control signal corresponding to a control instruction to be transmitted.

10. An audio control signal reception apparatus comprising:

signal input means for extracting an audio control signal which has been fed together with an audio signal;

control instruction specifying means for specifying a control instruction given as an audio control signal extracted by said signal input means; and

control instruction output means for outputting the control instruction determined by said control instruction specifying means;

wherein said control instruction output means outputs a control instruction corresponding to an audio control signal fed to said signal input means.

11. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means extracts an audio control signal from an audio signal and an audio control signal which have been time-division multiplexed, and supplies the audio control signal to said control instruction specifying means.

12. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means extracts an audio control signal superimposed on an audio signal, and supplies the audio control signal to said control instruction specifying means.

13. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means is supplied with an audio control signal and an audio signal via a signal transmission path and extracts from the audio control signal and the audio signal, an audio control signal and supplies the audio control signal to said control instruction specifying means.

14. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means includes reception

means for receiving an audio control signal and an audio signal which have been transmitted as a radio wave.

15. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means includes a microphone for detecting an audio control signal and an audio signal which have been outputted as a sound wave.

16. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means extracts an audio control signal which gives an operation control instruction for controlling operation of an apparatus to be controlled.

17. An audio control signal reception apparatus as claimed in Claim 10, wherein said signal input means extracts an audio control signal which gives a character display control instruction for a character display control.

18. An audio signal reception apparatus as claimed in Claim 10, wherein said audio control signal generating means extracts a DTMF signal string as an audio control signal which gives a control instruction.

19. An audio control signal reception apparatus as claimed in Claim 10, said apparatus further comprising means to be controlled for executing a control instruction determined by said control instruction specifying means,

wherein a control instruction corresponding to an audio control signal fed to said signal input means is executed so as to control said means to be controlled.

\*20. An audio control signal based control system comprising:

an audio control signal transmission apparatus for transmitting an audio control signal corresponding to a control instruction and an audio signal to be transmitted; and

an apparatus to be controlled, which receives an audio control signal transmitted together with an audio signal from said audio control signal transmission apparatus and executes a control instruction given by the audio control signal received,

wherein said apparatus to be controlled is controlled by a control instruction corresponding to an audio control signal transmitted from said audio control signal transmission apparatus.

\* 21. An audio control signal based control system as claimed in Claim 20, wherein said audio control signal transmission apparatus comprises: control instruction input means for specifying a control instruction to be transmitted; an audio control signal generating means for generating an audio control signal corresponding to a control instruction determined by said control instruction input means; and signal output means for outputting an audio signal to be transmitted

and an audio control signal generated by said audio control signal generating means, wherein said signal output means outputs an audio control signal corresponding to a control instruction and an audio signal to be transmitted.

\*22. An audio control signal based control system as claimed in Claim 20, wherein said apparatus to be controlled comprises: signal input means for extracting an audio control signal fed together with an audio signal; control instruction specifying means for specifying a control instruction given as an audio control signal extracted by said signal input means; and means to be controlled for executing the control instruction determined by said control instruction specifying means, wherein a control instruction corresponding to the audio control signal fed to said signal input means is executed.

\*23. An audio control signal based control system as claimed in Claim 20, said system comprising:

an audio control signal reception apparatus for outputting as a sound wave a control instruction corresponding to an audio control signal; and

an apparatus to be controlled for executing a control instruction outputted as a sound wave from said audio control signal reception apparatus,

wherein said apparatus to be controlled is controlled by a control instruction corresponding to an audio control signal transmitted from said audio control signal transmission

apparatus.

\* 24. An audio control signal based control method comprising:

a step of generating an audio control signal corresponding to a control instruction determined;

a step of transmitting said audio control signal together with an audio signal to be transmitted

a step of receiving said audio control signal together with the audio signal;

a step of extracting the audio control signal received; and

a step of executing a control instruction given by said audio control signal.

\* 25. An audio control signal based control method as claimed in Claim 24, wherein an audio signal to be transmitted and said audio control signal are switched between each other so as to be transmitted by way of time division.

26. An audio control signal based control method as claimed in Claim 24, wherein the audio signal to be transmitted is superimposed with said audio control signal when transmitted.

\*27. An audio control signal based control method as claimed in Claim 24, wherein an audio signal to be transmitted

and said audio control signal are transmitted via a signal transmission path.

\*28. An audio control signal based control method as claimed in Claim 24, wherein an audio signal to be transmitted and said audio control signal are transmitted as a radio wave.

29. An audio control signal based control method as claimed in Claim 24, wherein an audio signal to be transmitted and said audio control signal are transmitted as a sound wave.

30. An audio control signal based control method as claimed in Claim 24, wherein as said audio control signal, an operation control instruction is transmitted for controlling operation of an apparatus to be controlled.

31. An audio control signal based control method as claimed in Claim 24, wherein as said audio control signal, a character display control instruction is transmitted for a character display control.

32. An audio control signal based control method as claimed in Claim 24, wherein as said audio control signal, a DTMF signal string is transmitted.

33. A program information transmission apparatus comprising:

program information input means for inputting a program information to be transmitted;

audio information signal generating means for generating an audio information signal corresponding to a program information entered by said program information input means;

signal multiplexing means for multiplexing an audio signal to be transmitted, with the audio information signal generated by said audio information signal generating means; and

transmission means for transmitting the audio information signal and the audio signal which have been multiplexed by said signal multiplexing means,

wherein a program information is transmitted as an audio information signal together with an audio signal.

34. A program information transmission apparatus as claimed in Claim 33, wherein said signal multiplexing means is signal switching means for switching an audio signal to be transmitted, to an audio information signal generated by said audio signal information signal generating means.

35. A program information transmission apparatus as claimed in Claim 33, wherein said signal multiplexing means is signal superimposing means for superimposing an audio information signal generated by said audio information signal generating means, on an audio signal to be transmitted.

36. A program information transmission apparatus as

claimed in Claim 33, wherein said transmission means transmits to a signal transmission path, an audio information signal corresponding to a program information and an audio signal to be transmitted.

@ 37. A program information transmission apparatus as claimed in Claim 33, wherein said transmission means is radio transmission means for transmitting as a radio wave, an audio information signal corresponding to a program information and an audio signal to be transmitted.

@ 38. A program information transmission apparatus as claimed in Claim 33, wherein said audio information signal generating means generates a DTMF signal string as an audio information signal corresponding to a program information to be transmitted.

@ 39. A program information transmission apparatus as claimed in Claim 33, wherein said audio information signal generating means generates an audio information signal indicating a G code as a program information to be transmitted.

@ 40. A program information transmission apparatus as claimed in Claim 33, wherein said audio information signal generating means generates a DTMF signal string indicating a G code as a program information to be transmitted.

41 A program information transmission method comprising:  
a step of generating an audio information signal  
corresponding to a program information entered;  
a step of multiplexing an audio signal to be transmitted,  
with said audio information signal; and  
a step of transmitting a program information as an audio  
information signal together with an audio signal.

42. A program information transmission method as claimed  
in Claim 41, wherein the audio signal and the audio information  
signal corresponding to a program information are transmitted  
by way of time division

@ 43. A program information transmission method as claimed  
in Claim 41, wherein the transmission is carried out by  
superimposing the audio information signal corresponding to a  
program information, on the audio signal to be transmitted.

44. A program information transmission method as claimed  
in Claim 41, wherein a DTMF signal string is generated as the  
audio information signal corresponding to a program information  
to be transmitted, so that the program information is  
transmitted by the DTMF signal string.

@ 45. A program information transmission method as claimed  
in Claim 41, wherein an audio information signal indicating a  
G code is generated as a program information to be transmitted,

so that the program information is transmitted by the the audio information signal indicating the G code.

@ 46. A program information transmission method as claimed in Claim 41, wherein a DTMF signal string indicating a G code is generated as a program information to be transmitted, so that the program information is transmitted by the DTMF signal string indicating the G code.

47. A program reservation apparatus comprising:

reception means for receiving an audio information signal indicating a program information transmitted together with an audio signal to be transmitted;

program information specifying means for extracting the audio information signal received by said reception means and specifying a program information indicated by said audio information signal;

program information storage means for storing the program information determined by said program information specifying means;

control means for controlling said reception means; and

input means for inputting a set information to said control means,

@ wherein said control means, according to a reservation set information entered by said input means, by using a program information stored in said program information storage means, controls said reception means to reserve a program to be

received and receive the program reserved.

48. A program reservation apparatus as claimed in Claim 47, said apparatus further comprising recording means for recording on a recording medium an audio signal received by said reception means,

wherein said control means, according to a reservation set information entered by said input means, by using a program information stored in said program information storage means, controls said reception means and said recording means to reserve a program to be recorded and to record on a recording medium an audio signal of the program reserved.

49. A program reservation apparatus as claimed in Claim 47, wherein

    said reception means receives a video/audio signal, and  
    said control means, according to a reservation set information entered by said input means, by using a program information stored in said program information storage means, controls said reception means and said recording means to reserve a program to be recorded and to record on a recording medium a video/audio signal of the program reserved.

@ 50. A program reservation apparatus as claimed in Claim 49, wherein said control means controls to execute an image display of the program information stored by said program information storage means and accept a reservation set information entered

by said input means while said program information is displayed on a screen, thus carrying out a program reservation.

51. A program reservation apparatus as claimed in Claim 49, wherein said program information specifying means specifies a program information according to a DTMF signal string given as said audio information signal.

52. A program reservation apparatus as claimed in Claim 49, wherein said program information specifying means specifies a program information according to a G code given as said audio information signal.

53. A program reservation apparatus as claimed in Claim 49, wherein said program information specifying means specifies a program information according to a DTMF signal string indicating a G code given as said audio information signal.

54. A program reservation apparatus as claimed in Claim 49, wherein said control means specifies a program information according to a DTMF signal string indicating a G code given as said audio information signal.

@ 55. A program reservation apparatus as claimed in Claim 47, said apparatus further comprising recording/reproduction means for recording and reproducing via a recording means the audion information signal and the audio signal received by said

reception means,

wherein an audio information signal reproduced by said recording/reproduction means is extracted so that a program information indicated by said audio information signal is determined by said program information specifying means.

56. A program reservation method in which control is made comprising:

a step of receiving a program information transmitted together with an audio signal to be transmitted;

a step of specifying and storing a program information indicated by the audio information signal received;

a step of using a program information stored, according to a reservation set information entered, and reserving a program to be received; and

a step of receiving the program reserved.

57. A program reservation method as claimed in Claim 56, wherein control is made so that according to a reservation set information entered, a program information stored is used to reserve a program to be recorded in a recording medium, and

an audio signal of the program reserved is received and recorded on a recording medium.

58. A program reservation method as claimed in Claim 56, wherein control is made so that according to a reservation set information entered, a program information stored is used to

reserve a program to be recorded, and

a video/audio signal of the program reserved is received and recorded on a recording medium.

59. A program reservation method as claimed in Claim 56, wherein control is made to display on a screen a program information stored, and

a reservation set information is accepted while said program information is on a screen, so as to execute a program reservation.

60. A program reservation method as claimed in Claim 56, wherein a program information is determined according to a DTMF signal string given as said audio information signal.

61. A program reservation method as claimed in Claim 56, wherein a program information is determined according to a G code given as said audio information signal.

62. A program reservation method as claimed in Claim 56, wherein a program information is determined according to a DTMF signal string indicating a G code given as said audio information signal.

63. A program reservation method as claimed in Claim 56, wherein an audio information signal received is recorded/reproduced together with an audio signal via a

recording medium, and by extracting an audio information signal reproduced, a program information indicated by said audio information signal is determined.